

Appln No. 10/634,640  
Amdt date February 13, 2007  
Reply to Office action of October 13, 2006

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1-5 (Cancelled)

6. (Currently Amended) A method of decomposing an organic azide, comprising:  
allowing an organic azide to contact a catalyst that comprises a transition metal halide, ~~main group halide, mixed metal main group halide, or mixture thereof~~, wherein the organic azide has the formula  $R-N_3$ , where R is an organic group selected from the group consisting of alkyl, alkyl amino, nitrogen-containing heterocyclic-substituted alkyl, and alkyl amine substituted with at least one alkyl azide group, ~~and wherein the catalyst comprises a transition metal halide~~.

7. (Original) A method as recited in claim 6, wherein the transition metal in the transition metal halide can have one or more formal oxidation states.

8. (Original) A method as recited in claim 6, wherein the transition metal in the transition metal halide is present in its highest formal oxidation state.

9. (Currently Amended) A method of decomposing an organic azide, comprising:  
allowing an organic azide to contact a catalyst that comprises an iron halide or a mixture of iron halide and a second catalyst ~~a metal halide, main group halide, mixed metal main group halide, or mixture thereof~~, wherein the organic azide has the formula  $R-N_3$ , where R is an organic group selected from the group consisting of alkyl, alkyl amino, nitrogen-containing heterocyclic-substituted alkyl, and alkyl amine substituted with at least one alkyl azide group, ~~and wherein the catalyst comprises an iron halide or a mixture of iron halide and a second catalyst~~.

10. (Currently Amended) A method of decomposing an organic azide, comprising:

allowing an organic azide to contact a catalyst that comprises a transition metal chloride~~a metal halide, main group halide, mixed metal main group halide, or mixture thereof~~, wherein the organic azide has the formula  $R-N_3$ , where R is an organic group selected from the group consisting of alkyl, alkyl amino, nitrogen-containing heterocyclic-substituted alkyl, and alkyl amine substituted with at least one alkyl azide group, ~~and wherein the catalyst comprises a transition metal chloride.~~

11. (Original) A method as recited in claim 10, wherein the transition metal chloride comprises iron (III) chloride, iron (II) chloride, or a combination of iron (III) chloride and iron (II) chloride.

12. (Currently Amended) A method of decomposing an organic azide, comprising:  
allowing an organic azide to contact a catalyst that comprises an iron chloride in combination with a second catalyst~~a metal halide, main group halide, mixed metal main group halide, or mixture thereof~~, wherein the organic azide has the formula  $R-N_3$ , where R is an organic group selected from the group consisting of alkyl, alkyl amino, nitrogen-containing heterocyclic-substituted alkyl, and alkyl amine substituted with at least one alkyl azide group, ~~and wherein the catalyst comprises an iron chloride in combination with a second catalyst.~~

13. (Previously Presented) A method of decomposing an organic azide, comprising:  
allowing an organic azide to contact a catalyst that comprises a metal halide, main group halide, mixed metal-main group halide, or mixture thereof, wherein the organic azide has the formula  $R-N_3$ , where R is an organic group selected from the group consisting of alkyl, alkyl amino, nitrogen-containing heterocyclic-substituted alkyl, and alkyl amine substituted with at least one alkyl azide group, and wherein the catalyst is dispersed on a support.

14. (Original) A method as recited in claim 13, wherein the support comprises a second organic halide decomposition catalyst.

15-21 (Cancelled)

22. (Previously Presented) A composition of matter comprising:
- (a) an organic azide having the formula  $R-N_3$ , where R is an organic group selected from the group consisting of alkyl, alkyl amino, nitrogen-containing heterocyclic-substituted alkyl, and alkyl amine substituted with at least one alkyl azide group; and
  - (b) a catalyst capable of decomposing the organic azide, said catalyst comprising a transition metal halide.
23. (Previously Presented) A composition of matter as recited in claim 22, wherein the transition metal in the transition metal halide can have one or more formal oxidation states.
24. (Previously Presented) A composition of matter as recited in claim 22, wherein the transition metal in the transition metal halide is present in its highest formal oxidation state.
25. (Previously Presented) A composition of matter comprising:
- (a) an organic azide having the formula  $R-N_3$ , where R is an organic group selected from the group consisting of alkyl, alkyl amino, nitrogen-containing heterocyclic-substituted alkyl, and alkyl amine substituted with at least one alkyl azide group; and
  - (b) a catalyst capable of decomposing the organic azide, said catalyst comprising an iron halide or a mixture of iron halide and a second catalyst.
26. (Previously Presented) A composition of matter comprising:
- (a) an organic azide having the formula  $R-N_3$ , where R is an organic group selected from the group consisting of alkyl, alkyl amino, nitrogen-containing heterocyclic-substituted alkyl, and alkyl amine substituted with at least one alkyl azide group; and
  - (b) a catalyst capable of decomposing the organic azide, said catalyst comprising a transition metal chloride.

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27. (Previously Presented) A composition of matter as recited in claim 26, wherein the transition metal chloride comprises iron (III) chloride, iron (II) chloride, or a combination of iron (III) chloride and iron (II) chloride.

28. (Previously Presented) A composition of matter comprising:

(a) an organic azide having the formula  $R-N_3$ , where R is an organic group selected from the group consisting of alkyl, alkyl amino, nitrogen-containing heterocyclic-substituted alkyl, and alkyl amine substituted with at least one alkyl azide group; and

(b) a catalyst capable of decomposing the organic azide, said catalyst comprising an iron chloride in combination with a second catalyst.

29. (Previously Presented) A composition of matter comprising:

(a) an organic azide having the formula  $R-N_3$ , where R is an organic group selected from the group consisting of alkyl, alkyl amino, nitrogen-containing heterocyclic-substituted alkyl, and alkyl amine substituted with at least one alkyl azide group; and

(b) a catalyst capable of decomposing the organic azide, said catalyst comprising at least one metal halide, main group halide, mixed metal-main group halide, or mixture thereof; and wherein the catalyst is dispersed on a support.

30. (Previously Presented) A composition of matter as recited in claim 29, wherein the support comprises a second organic halide decomposition catalyst.

31-33 (Cancelled)